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ABSTRACT

Sixty half-hour family discussions generated by the "revealed differences technique" were analyzed to determine the emotional intensity and quality (friendliness/attacking) of messages between individuals in families with schizophrenic and "normal" sons. Thirty families in each situation (schizophrenic/normal) were matched for comparison. Both groups showed similarly frequent changes in emotional intensity over the course of their conversations; but "normal" families tended to increase the emotional intensity of their messages, while "schizophrenic" families tended to decrease their intensity. The schizophrenic sons had the most messages not addressed to particular persons. Mothers and fathers of schizophrenic sons expressed significantly more messages than their sons. Except for father-to-mother speeches, significant differences occurred across family types for the quality of messages. The schizophrenic sons received far more messages with negative affects than did the psychically healthy sons, especially from their mothers. Thirteen of the 30 schizophrenic sons had to be rehospitalized within two years of their first treatment; and analysis of the two schizophrenic subgroups that this situation created revealed that these subgroups differed in the ways their affect quality changed over the course of discussions. Paradoxically, the families with rehospitalized sons resembled normal families more strongly than families with nonrehospitalized sons. The schizophrenic subgroups also had different systematic dependencies for friendliness/attacking. (RL)

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AFFECTIVE INTERCHANGE IN FAMILIES WITH A SCHIZOPHRENIC SON +

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Affective interchange in families with a schizophrenic son

The relationship between family and schizophrenia has been investigated by using many different approaches. Besides dealing with the communicative processes (BATESON et al., 1956; HALEY, 1959), the perceptual and cognitive patterns (REISS, 1967, 1971; SINGER and WYNNE, 1965; WYNNE 1977) and the role structure (BOWEN, 1960; FLECK et al., 1959; WYNNE et al., 1958), research has mainly been focused on the affective climate in "schizopresent" families and the affective interchange among its members.

In these families, qualitative clinical studies suggested a striking deficit of emotional expressiveness. According to ACKERMAN (1971) "a quality of affective deadness pervades these families. The interpersonal climate seems lacking in vitality". KAUFMANN (1972) in this context coined the term "bas voltage".

The quality of emotional relationships between the members of "schizopresent" families has been repeatedly described as antagonistic and hostile. Well known are the concepts of "marital schism" (LIDZ et al., 1957), "emotional divorce" (BOWEN et al., 1959) and "pseudo-mutuality" (WYNNE et al., 1958).

However, systematic cross sectional studies by means of direct interaction observation showed quite inconsistent results (JACOB, 1975). Another question still open is whether the

differences that might be observed between the affective situation in "schizopresent" families and the families taken for comparison have an aetiological significance or whether they are simply reactive phenomena to the schizophrenic psychosis which has become manifest. Relatively well established, on the other hand, is the influence of family life on the course of schizophrenia. The findings of BROWN et al. (1962, 1972) and VAUGHN and LEFF (1976) suggest that the emotion expressed by the key relatives is significantly associated with relapse of the patient.

In the study presented here, we examined the two aspects of affects already mentioned:

- their intensity and
- their quality (in which, admittedly, we distinguish somewhat globally between positive and negative affects).

We tried to obtain answers to the two following questions:

- Do "schizopresent" families differ from "normal" families as regards the intensity and quality of the affects?
- Are there any correlations between the intensity, or the quality, of the affects in "schizopresent" families on the one hand and the further career as a patient of the person with the schizophrenic illness?

To investigate these questions, we selected various approaches:

- We studied the affect intensity and quality of the communication emitted and received by the individual members of the family.
- We checked whether changes in the intensity and quality of the affects expressed within the family could be ascertained in the course of the family sessions.
- We tried to clarify whether systematic dependences exist between the affective intensity or quality of the individual communications.

Whereas the first two approaches are based on the analysis of aggregated data (in the first case with reference to individuals, in the second to the whole family), we used time series analyses for the third approach.

Although much of the theoretical interest in family interaction is in the dynamics of the processes in the family group, and clinical investigators regard certain family processes as critical to the development of schizophrenia, only a bare handful of studies focus on the sequential patterning of interaction. There has been almost exclusive emphasis on summary or aggregate measures of behaviour, that is, on measures of behaviour totalled and averaged across an interval of time to provide overall indexes. The assumption has been too easily made in moving from empirical "static"

data to the "dynamic" theory that scores totalled and averaged over some specified period of time provide an adequate and valid representation of family process (MISHLER and WAXLER, 1975).

First of all, a few more remarks on time series analysis: one distinguishes between two types of stochastic models (REVENSTORF, 1979):

- the auto-regressive model; in this, the value of a variable is determined by the value in the preceding time. One can speak of a growth process (or, with reference to our question, to an escalation of the affects)
- the moving average process; in this, the current value of a variable is determined by the error value at the preceding time. This process corresponds to a homeostatic process, as reactions to deviations from a set value occur.

Both types of process can occur "combined". The third possibility is the independent Bernoulli process, which says that there is no dependence between the data.

Methods

We examined the video and stereophonic tape recordings, as well as verbatim transcripts prepared from them, of family discussions which had been generated by the "revealed differences technique" (STRODTBECK, 1951). The people taking part in the discussion, father, mother

and son, had completed a questionnaire containing 40 hypothetical questions from the family's daily life before the discussion began. There were in each case two possible solutions given, one of which had to be chosen. Problem situations for which the members of the family suggested diverging solutions were subsequently submitted to the whole family with the instructions to try, in a joint discussion, to arrive at a concensus. The discussion lasted 30 minutes. The members of the family were on their own during this time.

We determined the intensity and quality of the affects voiced during the family discussions on the strength of two bi-polar 5-point scales developed by RISKIN and FAUNCE (1970): the "Intensity scale" and the "Relationship scale". According to the authors, the "Intensity scale" measures the relative amount of affective or emotional intensity that the family members show in their speech. The "Relationship scale" measures the amount of friendliness or attacking that occurs between family members. Thorough rating instructions are to be found in an unpublished manual that the authors kindly made available to us.

Because of the enormous amount of time involved, we restricted ourselves to the evaluation of one interaction sequence each out of the first and second halves of the discussion. Each interaction sequence comprised 75 basic units. The basic unit which was rated was the "speech",

defined essentially as all the sounds one person uttered until someone else made a sound. The first speech sequence investigated began with the 6th minute of the discussion, the second with the 16th minute.

In a first evaluation step, it was determined, on the strength of the video recordings, who spoke to whom. Working from the stereophonic tape recordings and the transcripts, the ratings of the affect intensity and relationship quality were then made. All families were rated by two persons who knew nothing about the families. A random sample of twenty families was jointly rated, that is, both raters scored the families independently. The PEARSON correlation coefficient were computed as a measure of inter-rater reliability. For the intensity scale it was: range r = .54 - r = . 91, mean r = . 81; for the relationship scale: range r = .61 - r = .92, mean r = .86.

Subjects

"Schizopresent families"

The questionnaire was presented to 30 families with male patients who had to be hospitalized for the first time with a diagnosis of schizophrenia. This was an approximately complete survey of all patients from the greater Hanover region in the period from January 1975 to June 1977, who fulfilled several preset psychiatric and demographic selection criteria. Patients with the diagnosis borderline or schizoaffective psychoses, alcohol or narcotics-induced psychoses were excluded from the study. The diagnosis was

based on a standardized clinical interview (Present State Examination, WING et al., 1974).

Only those patients were taken into account in whom the risk of false positive diagnoses did not exceed 4% (CARPENTER et al., 1973). The response rate was 88.2%.

"Normal" families

This group consists of 30 families with adolescents/young adults who had been admitted consecutively to two surgical hospitals in Hanover because of an acute abdominal condition or they required plastic or accident surgery. Neither the patients nor the parents were stated to have already required psychiatric help. The response rate here reached 63.5%.

The same biographical/demographic selection criteria were applied to both groups: the sons were to be between 15 and 30 years old and single. Both natural parents were to be still living together in the married state. The sons should have grown up with their parents and have been in close contact with them up to the time of the study. The language of communication in the family had to be German.

The demographic data of the parents of the two groups are compiled in Table 1. Statistical analysis by means of the t-test (age) or χ^2-test (school education, social class) did not reveal any significant differences.

Results

Comparison of "schizopresent" and "normal" families

For the individual speakers and addressees, as well as for the 6 combinations between these and the communications directed at nobody in particular, the mean figures calculated throughout the whole evaluated discussion period were compared between the two family groups (t - test, two - tailed).As Table 2 shows, the parents of the schizophrenic patients scarcely differ from those of the psychically healthy son as regards the intensity of affect. Only the fathers of the schizophrenic patients express fewer affects when they are not speaking directly to a certain person. The schizophrenic patients, on the other hand, express distinctly fewer affects; this applies both in comparison to psychically healthy adolescents or young adults and to their own parents. It seems wellfounded to recognise in that the expression of the persistent psychic disturbance in the sense of a reduction of emotional expressiveness. It is interesting to note that the psychically ill display the most affects when they are not addressing their speech directly at a certain person. In the direct interaction between the parents and the schizophrenic son, a distinct imbalance is observable: both parents express significantly more affects than their sons.

In order to be able to record possible, longer - term changes in the course of the discussions, the intensity and the quality of the affects expressed were determined and compared with each other separately for the two discussion sequences investigated - in each case on the whole family triade.

As regards the method, determination of the dependence or independence of the sequential data was necessary for this. If a dependent process was present, it had to be clarified whether it was an auto - regressive, a moving average process or a combination of both types of process. BOX and JENKINS (1970) suggested a system with three indices to classify these processes, the indices being p, d and q with

p = the order of the auto - regressive process

d = the number of the differences to arrive at a stationary process, which is the precondition for both patterns, and

q = the order of the moving average process

In the following graphs, we have used these indices. In the light of knowledge of the process characteristics of the sequential data, the two discussion sequences were able to be compared with one another with the aid of modified t - tests. If one regards the affect intensity, it is shown that in both groups a similarly frequent change - namely 15 and 12 times respectively - occured between the first and second halves of the discussions (Table 3). But if, over and above this, one takes into account the direction of the changes, a distinct difference is found between the "schizo-present" and the "normal" families: whereas in the latter the intensity of the affect tends rather to increase during the discussion, it tends to decrease in the "schizo-present" family ($p < .05$, FISHER - test).

The decline in emotional intensity during the discussion could be correlated with the general detachment of the

schizophrenic patient in such a manner that the parents are, so to speak, infected by the affective "bas voltage" of the son. Another possible explanation for this phenomenon is supplied by the communicative disturbances observed by us in the same families, which, apart from their fatiguing effect, can also lead to a decline in emotional engagement. The fact that these families much less frequently succeeded in arriving at a consensus, could, in this context, be significant: the resignation accompanying this could also have influenced a reduction of the emotional involvement.

Within the scope of a prior investigation, we had been able to observe, in three families with very distinct interaction patterns, dependence processes differing from one another and corresponding well with the patterns. Our expectation, based on this, that there would be a clear differentiation between "schizopresent" and "normal" families was not fulfilled with reference to the intensity of the affects. In both family groups, the BERNOULLI processes ($p = 0$, $d = 0$, $q = 0$) predominate, that means that there is no dependence between the sequentially recorded data of the affect intensity (Table 4).

The figures of the scales measuring the quality of the affects diverge in a stereotype fashion in the index families from the neutral point to the negative pole, in the control families, on the other hand, towards the positive pole (Table 5). The differences between the two family groups are - with the exception of the communication addressed by the

father to his wife - entirely significant statistically. Particularly when the mothers address themselves directly to their psychically ill sons, as well as when they are not addressing anyone in particular, their speeches are much more attacking, rejecting or complaining than the speeches emitted by the mothers of the control group. The latter applies similarly to the sons. The schizophrenic sons recieved from their parents far more messages occupied with negative affects than did the psychically healthy sons.

A significant alteration on the quality of the affective climate in the family from the first to the second part of the discussion was similarly frequently observable in both groups (13 and 10 times) (Table 6). Even if the direction of the alteration is taken into account, it was not possible to distinguish between the two groups. Systematic dependences between the affect quality of the individual communications also occured with similar frequency (namely 9 and 7 times) (Table 7).

Relationship between the intensity and quality of the affects in the family and the patients' career of the schizophrenic son

A follow - up study of the 30 schizophrenic patients showed that 13 had to be re - hospitalised within 2 years of discharge from the first in - patient psychiatric treatment. This was not necessary in the case of 17 patients. The re - hospitalisation served as a criterion for the formation of 2 sub - groups of "schizopresent" families. Similarly to the procedure when comparing "schizopresent" and "normal" families, we

investigated again the communications emitted and received by the individual members of the families as regards their average intensity and quality, compared the affects expressed in the first and second parts of the discussions within the families and examined the nature and frequency of the systematic dependences occurring between the individual affect expressions.

As regards affect intensity, it must be said that all three approaches failed to make it possible to differentiate between families whose sons had to be re-hospitalised within the period of investigation and such families as whose sons did not make this step necessary (Tables 8, 9 and 10). The same also applies - as regards the aggregated data - to the quality of the affects (Tables 11 and 12). There was, however, a clear difference between the two sub-groups of "schizo-present" families, if one analysed the dependences between the individual communications. As Table 13 shows, in the families with sons in whom the psychosis had run a favourable course, there were systematic dependences in only 2 out of 17 cases, whereas in families whose sons had again to be hospitalised for psychiatric treatment, they were present in 8 out of 13 families ($p < .001$, Fisher-test). In this context, auto-regressive (one could also say positive feedback) processes or moving average processes (i.e. negative feedback processes) were observed in 4 families each. With the first type, a deviation from the emotional norm of the family led to an escalation of feelings in this direction, with the second type on the other hand, a deviation from the

target value was rapidly corrected and thus the emotional homeostatic balance maintained - even when this resulted in a pseudo-mutuality (see WYNNE et al., 1958).

Now, if one compared the dependence relationships in the two sub-groups "schizopresent" families with those in the "normal" families, one encounters the at first apparently paradoxical fact that the families with re-hospitalised sons more strongly resemble the "normal" families than the families with the sons who had suffered no relapse leading to inpatient psychiatric treatment. But one must now point out again that the affective atmosphere in the two groups differs quite considerably (see above). It is doubtless a difference whether the processes described unwind in an harmonious and accepting climate or whether relationships of animosity predominate between the members of the family. In the latter event, which is in fact generally characteristic for "schizopresent" families, one could see in the two forms of dependences - escalation as also homeostasis - equivalents of the initially mentioned "schism" and "skew". As for the rest, parallels to the results of BROWN et al. (1962, 1972) and VAUGHN and LEFF (1976) must be pointed out, who were able to repeatedly demonstrate a distinct correlation between the density of the emotional relations between relatives and patients, and the forecast of the schizophrenic illness.

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Abstract

Affective interchange in families with a schizophrenic son.
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Quality and intensity of the affective interchange in 30 "schizopresent" families is studied by means of a modified version of Riskin and Faunce's Interaction Rating Scales. Results of the analysis of aggregate data as well as of time series analysis are presented.

Comparison with "normal" families does show differences in quality but not - except for the son - in intensity of affect. In both family groups Bernoulli processes predominate, i.e. there is no systematic dependence between the sequentially recorded data of affect.

With regard to the affect intensity, no differentiation is possible between families whose sons had to be re-hospitalized within two years of discharge from the first in - patient psychiatric treatment and those families whose sons did not need a re - admission. There is, however, a clear difference between the two sub - groups when the dependencies between the affect quality of the individual communications are analyzed: Only the families with sons in whom the psychosis had run a favorable course, positive feedback processes (i.e. auto - regressive processes) or negative feedback processes (i.e. moving average processes) predominate.

Tab. 1: Sociodemographic data of the index and control groups

	Father		Mother		Son	
	Index	Control	Index	Control	Index	Control
Age (years)	55.1 9.4	52.1 9.3	51.8 9.2	48.1 7.6	21.6 3.9	19.8 3.2
Education (N)						
Primary school	15	12	17	16	14	11
Secondary school	6	6	12	9	7	10
Senior/professional matriculation	9	10	1	3	9	7
Profession: social class (N)[1]						
Lower class	5	3	2	-	-	-
Upper lower class	8	6	3	5	4	1
Lower middle class	6	6	5	8	1	3
Middle class	6	7	-	-	-	1
Upper middle class	5	6	1	1	-	-
Without occupation	-	-	19	14	25	23

[1]Self-assessment of social class (SSE) (Kleining and Moore, 1968)

Tab. 2. Intensity of affect

	Schizopresent families (N=30)		Normal families (N=28)		p +)
	$\bar{x}$	s	$\bar{x}$	s	
speeches emitted					
father total	3.35	0.32	3.43	0.31	-
to mother	3.39	0.36	3.37	0.72	-
to son	3.45	0.50	3.52	0.28	-
to no one/to both	3.21	0.35	3.39	0.27	.05
mother total	3.39	0.40	3.45	0.29	-
to father	3.48	0.52	3.46	0.74	-
to son	3.39	0.53	3.53	0.26	-
to no one/to both	3.32	0.30	3.35	0.20	-
son total	2.93	0.74	3.36	0.40	.01
to father	2.89	1.22	3.43	0.71	.05
to mother	2.82	1.25	3.33	0.71	.10
to no one/to both	3.09	0.58	3.31	0.23	.10
speeches received					
father	3.18	0.65	3.44	0.51	.10
mother	3.11	0.61	3.35	0.43	.10
son	3.42	0.45	3.52	0.23	-

+) t - test, two - tailed

TAB. 3. CHANGE OF INTENSITY OF AFFECT BETWEEN 1ST AND 2ND INTERACTION SAMPLE

	↑	↓	—
SCHIZOPRESENT FAMILIES (N=30)	3	5	22
NORMAL FAMILIES (N=28)	12	3	13

↑ SIGNIFICANT INCREASE

↓ SIGNIFICANT DECREASE

— NO SIGNIFICANT CHANGE

COMPARISON BETWEEN ↑ AND ↓ : P 0.05 (FISHER-TEST)

TAB. 4. SEQUENTIAL PROCESS ANALYSIS OF INTENSITY OF AFFECT

	100	101	001	000
SCHIZOPRESENT FAMILIES (N=30)	5	1	1	23
NORMAL FAMILIES (N=28)	5	2	2	19

100 AUTO-REGRESSIVE PROCESS

001 MOVING AVERAGES PROCESS

101 COMBINATION OF BOTH

000 BERNOULLI PROCESS

COMPARISON BETWEEN 100+101+001 AND 000: $\chi^2=0.56$, DF=1, P N.S

Tab. 5. Quality of affect

	Schizopresent families (N=30) $\bar{x}$	S	Normal families (N=28) $\bar{x}$	S	P +)
speeches emitted					
father total	2.91	0.40	3.17	0.36	.05
to mother	2.90	0.45	3.00	0.68	-
to son	2.89	0.55	3.27	0.38	.01
to no one/to both	2.94	0.37	3.24	0.32	.01
mother total	2.77	0.48	3.21	0.39	.001
to father	2.67	0.61	3.05	0.76	.05
to son	2.80	0.55	3.33	0.35	.001
to no one/to both	2.85	0.47	3.25	0.30	.001
son total	2.64	0.66	3.12	0.39	.001
to father	2.56	1.12	3.07	0.68	.05
to mother	2.52	1.12	3.06	0.73	.05
to no one/to both	2.83	0.41	3.22	0.24	.001
speeches received					
father	2.61	0.65	3.06	0.60	.01
mother	2.71	0.56	3.03	0.57	.05
son	2.84	0.50	3.30	0.32	.001

+) t - test, two - tailed

TAB. 6. CHANGE OF QUALITY OF AFFECT BETWEEN 1ST AND 2ND INTERACTION SAMPLE

	↑	↓	—
SCHIZOPRESENT FAMILIES (N=30)	8	6	16
NORMAL FAMILIES (N=28)	4	6	18

↑ SIGNIFICANTLY MORE POSITIVE/LESS NEGATIVE

↓ SIGNIFICANTLY MORE NEGATIVE/LESS POSITIVE

— NO SIGNIFICANT CHANGE

COMPARISON BETWEEN ↑ AND ↓ : χ^2=0.69, DF=1, P N.S.

TAB. 7. SEQUENTIAL PROCESS ANALYSIS OF QUALITY OF AFFECT

	100	101	001	000
SCHIZOPRESENT FAMILIES (N=30)	5	1	4	20
NORMAL FAMILIES (N=28)	4	2	1	21

100 AUTO-REGRESSIVE PROCESS

001 MOVING AVERAGES PROCESS

101 COMBINATION OF BOTH

000 BERNOULLI PROCESS

COMPARISON BETWEEN 100+101+001 AND 000: $\chi^2=0.49$, DF=1, P N.S.

Tab. 8. Intensity of affect

	Families with rehospitalized schizophrenics (N=13) $\bar{x}$	s	Families with not rehospitalized schizophrenics (N=17) $\bar{x}$	s	p +)
speeches emitted					
father total	3.40	0.33	3.31	0.31	-
to mother	3.43	0.45	3.36	0.28	-
to son	3.54	0.51	3.37	0.49	-
to no one/to both	3.24	0.36	3.19	0.35	-
mother total	3.28	0.49	3.48	0.30	-
to father	3.29	0.58	3.63	0.44	.10
to son	3.34	0.64	3.43	0.44	-
to no one/to both	3.22	0.34	3.39	0.26	-
son total	2.99	0.88	2.88	0.63	-
to father	3.13	1.02	2.70	1.36	-
to mother	2.76	1.38	2.87	1.78	-
to no one/to both	3.09	0.65	3.08	0.54	-
speeches received					
father	3.21	0.61	3.16	0.70	-
mother	3.09	0.66	3.11	0.59	-
son	3.44	0.52	3.40	0.40	-

+) t - test, two - tailed

TAB. 9. CHANGE OF INTENSITY OF AFFECT BETWEEN 1ST AND 2ND INTERACTION SAMPLE

	↑	↓	—
FAMILIES WITH NOT REHOSPITALIZED SCHIZOPHRENICS (N=17)	1	4	12
FAMILIES WITH REHOSPITALIZED SCHIZOPHRENICS (N=13)	2	1	10

↑ SIGNIFICANT INCREASE
↓ SIGNIFICANT DECREASE
— NO SIGNIFICANT CHANGE
COMPARISON BETWEEN ↑ AND ↓ : P N.S. (FISHER-TEST)

TAB. 10. SEQUENTIAL PROCESS ANALYSIS OF INTENSITY OF AFFECT

	100	101	C01	000
FAMILIES WITH NOT REHOSPITALIZED SCHIZOPHRENICS (N=17)	3	1	1	12
FAMILIES WITH REHOSPITALIZED SCHIZOPHRENICS (N=13)	2	-	-	11

100 AUTO-REGRESSIVE PROCESS

001 MOVING AVERAGES PROCESS

101 COMBINATION OF BOTH

000 BERNOULLI PROCESS

COMPARISON BETWEEN 100+101+001 AND 000: P N.S. (FISHER-TEST)

Tab.11. Quality of affect

	Families with rehospitalized schizophrenics (N=13) $\bar{x}$	s	Families with not rehospitalized schizophrenics (N=17) $\bar{x}$	s	p +)
speeches emitted					
father total	2.84	0.45	2.97	0.35	-
to mother	2.85	0.53	2.94	0.40	-
to son	2.73	0.64	3.02	0.44	-
to no one/to both	2.94	0.43	2.95	0.34	-
mother total	2.69	0.57	2.83	0.40	-
to father	2.57	0.76	2.74	0.48	-
to son	2.71	0.57	2.86	0.54	-
to no one/to both	2.79	0.60	2.90	0.36	-
son total	2.64	0.70	2.64	0.65	-
to father	2.70	0.90	2.46	1.29	-
to mother	2.39	1.15	2.61	1.12	-
to no one/to both	2.82	0.42	2.84	0.42	-
speeches received					
father	2.63	0.55	2.60	0.73	-
mother	2.62	0.60	2.77	0.54	-
son	2.72	0.58	2.94	0.41	-

+) t - test, two - tailed

TAB. 12. CHANGE OF QUALITY OF AFFECT BETWEEN 1ST AND 2ND INTERACTION SAMPLE

	↑	↓	—
FAMILIES WITH NOT REHOSPITALIZED SCHIZOPHRENICS (N=17)	5	3	9
FAMILIES WITH REHOSPITALIZED SCHIZOPHRENICS (N=13)	3	2	8

↑ SIGNIFICANTLY MORE POSITIVE/LESS NEGATIVE
↓ SIGNIFICANTLY MORE NEGATIVE/LESS POSITIVE
— NO SIGNIFICANT CHANGE
COMPARISON BETWEEN ↑ AND ↓ : P N.S. (FISHER-TEST)

TAB. 13. SEQUENTIAL PROCESS ANALYSIS OF QUALITY OF AFFECT

	100	101	001	000
FAMILIES WITH NOT REHOSPITALIZED SCHIZOPHRENICS (N=17)	1	1	-	15
FAMILIES WITH REHOSPITALIZED SCHIZOPHRENICS (N=13)	4	-	4	5

100 AUTO-REGRESSIVE PROCESS

001 MOVING AVERAGES PROCESS

101 COMBINATION OF BOTH

000 BERNOULLI PROCESS

COMPARISON BETWEEN 100+101+001 AND 000: $p < .001$ (FISHER-TEST)